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ABSTRACT

Objectives of the Career Assessment, Remediation, Education, Employment, and Re-entry (CAREER) project were to establish a series of intensive, short-term job training programs using competency-based instruction to serve Hispanic persons who were economically disadvantaged, displaced, unemployed, or underemployed, as well as Hispanic females who were seeking nontraditional occupations. An advisory committee for each program area developed a list of entry-level competencies and reviewed and revised curricula to meet industry needs. The Developing a Curriculum (DACUM) process was used to develop courses in plastic injection molding operations, equipment maintenance helper skills, machine shop fundamentals, and computer numerical control. Support services included counseling and job placement assistance. Of 144 students enrolled in CAREER, 64 percent successfully completed training. The CIPP (Context-Input-Process-Product) Evaluation Model was used for formative and summative evaluation. Sources for evaluation information were project data and semistructured interviews with faculty, staff, and students. The overall success of the program was illustrated by the average external evaluation scores of project components on a scale of 1 to 5 on which a score of 5 was the highest. Component scores were as follows: curriculum review and development--5.0; assessment and counseling--4.6; instructional delivery--5.0; and follow-up services--2.6. The sum of benefits to participants and employers was found to exceed the total cost of the project. (Appendices include survey data, list of software and textbooks, student educational plan, pre/post assessments, list of workshops, and student placement and retention data.) (YLB)

ED328700

Career Assessment, Remediation, Education, Employment,
and Re-entry Program. (CAREER)

V199A90047

EL PASO COMMUNITY COLLEGE

CAREER GRANT

FINAL REPORT

December 12, 1990
Carol A. LaFleur

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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The objectives of CAREER were to establish a series of intensive, short-term job training programs using competency-based instruction. CAREER offered students achievable educational goals and provided them with practical steps to employment. Different from job-training programs typically offered by community colleges, CAREER was distinguished by a number of factors: the training was buttressed by strong support structures based on individualized plans for each student; group and individual sessions motivated and inspired students to succeed; support structures were established to encourage students to aspire to continue their studies; leaders from business and industry were involved in curricula review and development, mentoring, placement and evaluation; and faculty were deeply involved in the design and evaluation of the programs.

To insure that the appropriate private sector/education mix occurred and the programs matched the needs of local employees and employers, El Paso Community College conducted a study of skills needed in specific workplace environments in El Paso's SMSA. The workplace environments that were selected for inspection included the six industries in the greater SMSA that have undergone the greatest changes in the last five years; such as plastics, transportation, electronics and manufacturing.

In an effort to develop the type of collaborative program needed in El Paso SMSA the College further sampled area employers. The data obtained reflected a portrait of perceptions of private sector

in five critical areas.

1. Solving the imbalance between the unmet demand for highly skilled workers and the oversupply of unemployed and underemployed individuals in El Paso SMSA currently unable to fill the demand.
2. Upgrading and retraining necessary for entry-level workers and technicians.
3. Developing a workforce proficient in basic skills.
4. Providing a reliable workforce of individuals who demonstrate appropriate work attitudes and behaviors.
5. Increasing productivity in the private sector workforce.

The results found in Table 1, which follows, showed that there was little argument among the respondents that a more efficient use of El Paso's existing workforce was critically important. The traditional preparation for employment offered by El Paso's educational system and traditional employment policies of private sector were not adequate in meeting the present employment need.

The responses showed a critical need for:

- . disadvantaged and unemployed assessment
- . skills training in industrial maintenance
- . basic skills instruction
- . bilingual instruction
- . high technological training in plastics, computer numerically controlled machinery, and other advanced training

TABLE 1

Sample of Perceptions of El Paso Employers, Labor Organizations,
Trade Councils on Critically Needed Cooperative Training

<u>Concern</u>	<u>% Indicating Need</u>
Need for assessment	64%
Need for instruction for high school equivalency diploma	59%
Need for basic skills instruction	70%
Need for bilingual instruction	69%
Need for speaking and listening skills	58%
Need for critical thinking skills	43%
Need for update skills to accommodate technological skills (produce, install, operate, or maintain high technological equipment).	71%
Need for support services	48%

The survey showed that creating an effective local infrastructure for education-work linkages is an incremental process. There are no identifiable realistic short-term alternatives to building a base for a comprehensive higher education-industry alliance. Patience, thorough planning and evaluation, intensity of effort, and adequate resources are required on the part of both the college and El Paso's private sector in developing and implementing relevant work-education programs.

El Paso Community College has traditionally played an active role in the community it serves and El Paso Community College is dedicated to providing efficient and responsive programs to meet the needs of local industry and to play a key role in the economic development of the community. In partnership with the private sector, the El Paso Chamber of Commerce, the City of El Paso, the Upper Rio Grande Private Industry Council, the El Paso Industrial Development Corporation, and others, an Advanced Technology Center was designed. The Center houses state-of-the-art equipment in anticipation of new labor market needs, and possesses the ability to upgrade and retrain workers for jobs in new technologies.

The College also sponsored a comprehensive study of businesses and industries in the El Paso area for the Consortium on Business Industrial Education and Training of the El Paso Chamber of Commerce which identified the needs and demands for education and training of the labor force. The College is an active member of the Consortium which is composed of all organizations concerned with vocational education. The Consortium was formed in 1981 by the Chamber of Commerce, El Paso Community College, El Paso Independent School District, Yselta Independent School District, University of Texas at El Paso, Texas Employment Commission, Industrial Development Corporation, Upper Rio Grande Private Industry Council and the Office of Economic Development, City of El Paso.

ADMINISTRATION

The Coordinator was responsible for coordinating the development and modification of the technical programs. Based on the industry survey two existing programs were modified; Plastic Injection Molding and Equipment Maintenance Helper and two new programs were created; Machine Shop Fundamentals and Computer Numerical Control Machine Operator.

CAREER was designed to serve the Hispanic economically disadvantaged, displaced, unemployed, underemployed and Hispanic females who were seeking non-traditional occupations. The objective was to offer these individuals an opportunity to achieve educational career goals while gaining employable skills. Guidelines were established for recruiting and admitting students. A data base was designed and developed for managing the budget and another for tracking students through the program from admittance to a follow-up interview after six months of employment.

FACULTY

Recruitment of faculty was accomplished through industry contacts, professional associations and advisory committees. Each of our faculty possessed technical expertise in their field but lacked teaching experience. In-service training was held to assist the faculty in making the transition from industry to the classroom. During the first course in each program area, the instructors were required to submit in writing their daily lecture and lab sessions. This information was used to develop a course syllabus. The syllabus served two purposes: it assisted the

instructors in following structured lesson plans; and, it aided students in preparing for class. Student surveys of the first classes indicated a need for more structure because they expressed concerns about not knowing what was expected of them and what material was to be covered. Subsequent class participants were issued a course syllabus during orientation.

INDUSTRY PARTICIPANTS

An Advisory Committee for each program area was formed. The committees consisted of people from industry actively involved in the day-to-day operation of a particular program area. Each committee developed a list of competencies they would expect a perspective employee to possess. Industry requirements determined minimum basic skills performance levels. Minimum math performance levels were determined during the DACUM task analysis process. Minimum reading levels were determined by analyzing job-required reading materials such as technical manuals, material specification sheets, machine operating instructions, etc.

The Advisory Boards reviewed the curriculum and revisions were made to meet industry needs. The revisions included adding or eliminating competencies because of the limited class time for each program. Upgrade courses were suggested and developed to provide additional material not included in the original program. Students completing the CAREER program and placed in entry level jobs were encouraged to return for evening upgrade courses. Several of our Advisory Board members were actively involved in

the hiring of our graduates which made their input pertinent in training employable students. Employer surveys rated the skills/competency levels of CAREER students at average or above average (Appendix A).

CURRICULUM

The DACUM process is an innovative approach to occupational analysis that is conducted under the direction of a trained DACUM facilitator. At its core is the integration of local experts and workers in the designated occupation to explain precisely what it is that they do, and how they do it.

The completion of the DACUM process is the generation, by the actual workers, of a graphic profile of the tasks required in the designated occupation. This analysis served CAREER by providing the background for the development of a competency-based curriculum and training program and served the needs of participating employers by providing similar background for job descriptions and performance evaluations. The results of the DACUM were given to each program instructor for curriculum development. Curriculum development is best done by instructors with technical expertise who will be teaching the program. Each course was developed to offer students basic skills instruction integrated with technical theory and practical hands-on instruction.

The Plastic Injection Molding Operations course covered molding systems, plastic resins, auxiliary equipment, material

handling, injection mold maintenance, process trouble shooting and mold set-up for 312 contact hours.

The Equipment Maintenance Helper course covered print reading, mechanical systems, basic electricity and basic pneumatics and hydraulics for 400 contact hours.

Machine Shop Fundamentals covered blueprint reading, shop safety, measuring instruments, layout work, hand tools, fasteners, drills and drilling machines, power sawing, machine lathe and milling machines for 426 contact hours.

The Computer Numerical Control (CNC) Machine Operator covered the set-up and operation of CNC machining centers for sixty contact hours. This course was offered at the completion of each Machine Shop Fundamentals course and the majority of our machining students enrolled in these classes.

Students received technical training Monday through Thursday for five hours consisting of lecture, audio visual media, small group, individualized and practical hands-on instruction. Five hours of open lab were held on Fridays for review and/or special projects. Each instructor was assigned a lab assistant.

COMPUTER-ASSISTED INSTRUCTION

The Basic Skills component of the program was designed to integrate basic skills with technical instruction. The computer-assisted instructor was responsible for researching and implementing an effective system for our program. The Computer-Assisted instructor worked closely with the faculty in developing the vocationally-specific curriculum for each program.

The basic skills lab which houses fourteen PC's and various educational software (Appendix B) in Math, Reading and Writing served approximately fifty students daily. Throughout the duration of the program, students attended an average of 4 1/2 hours of CAI and an average of three hours of basic skills and work readiness lectures weekly.

Based on the competency levels local industry representatives recognized essential for entry level jobs and the results of the TABE assessment, an individual education plan (IEP) (Appendix C) was developed for each student to include math, reading, vocabulary and comprehension. The amount of time spent in basic skills instruction differed for each student based on the TABE results. As students became proficient in basic skills they were post-assessed and released from attending basic skills classes. Many of our students did not have a high school diploma and could have studied for their GED at this time. I would strongly recommend an open-entry/open-exit GED program be initiated in conjunction with the CAI instruction. Basic skills instruction was accomplished through computer-aided instruction and lectures. Although students were receptive to the user-friendly hardware and software in the basic skills lab, the students requested concurrent lectures. Both methods allowed for immediate reinforcement of the technical math and vocabulary facilitating the training process. Writing skills were developed through writing assignments based on topics related to the student's specific technical occupation. As patterns of deficiencies

evolved and were identified, students were tutored individually and were assigned to writing/grammar modules on CAI. Throughout the duration of the training, the student's progress was measured against learning objectives as outlined in the IEP. Student files were reviewed weekly, and the basic skills instructor conferred with students individually to evaluate the student's academic progress.

Seventy-two percent of those students who received basic skills instruction mastered the required competencies in math and gained an average of 3.2 grade levels in vocabulary, and an average of 2.9 grade levels in comprehension (Appendix D).

RECRUITMENT/ASSESSMENT

Recruitment

The recruitment process required establishing an effective communication network with several local agencies: Private Industry Council; Department of Human Resources; Texas Employment Commission; etc. Representatives from these agencies were invited to the ATC for a tour of our facility and an overview of our programs. Public Service Announcements were broadcast on local radio stations announcing the availability of the various training programs being offered at the ATC. A brochure was designed and distributed to agencies, industries, high schools and at career fairs. An ad was placed in the classified section of the local newspaper, on weekends, 3 to 4 weeks prior to the beginning of each class. This provided ample time for

recruitment, assessment and orientation.

Students were initially interviewed to determine interest, commitment and ability. They were given a tour of the ATC Center and an overview of each of the program areas. Many students were undecided about which program area to choose, but most shared a common concern for training which would eventually lead to financial security. During the interview process we attempted to determine interest, commitment and means of financial support. We enrolled 145 students and ninety-three completed our programs for a sixty-four percent retention rate (Appendix E). The major retention problem was due to the lack of financial support. Students dropped out of class to obtain employment because of financial necessity. Referrals were made to outside agencies for assistance with rent, mortgage payments, utilities, food and transportation. Lack of student motivation was also a retention factor which could be improved with a career assessment tool (Appendix F). Mid-way through the program we were able to get our programs approved by the Texas Employment Commission which enabled individuals who were unemployed to attend our programs without actively seeking full-time employment.

Assessment

The first group of students to enter our programs were tested for reading with the Nelson-Denny Reading Test which generated an individual's reading level by grade. Our students were in class for only five months, therefore, we needed an assessment

instrument that was diagnostic and specified the areas of weakness. The Test of Adult Basic Education (TABE) is a norm-referenced test designed to measure achievement in reading, mathematics, language and spelling. TABE test results indicated the grade reading level and areas of deficiency. This enabled the CAI instructor to develop an Individual Education Plan (IEP) that concentrated on the areas of deficiency. All students were pre-assessed and only those who scored below eleventh grade were post-assessed. Students who scored below a 6th grade reading level were referred to other programs at El Paso Community College. A sixth grade reading level was required for admittance into our programs based on the recommended readability levels of the textbooks.

COUNSELING

Support services were vital to the success of our program in assuring students overcame academic and personal "rough spots." The students enrolled in CAREER came from different ethnic backgrounds and varied in age, attitude and educational background. The Advising Specialist provided assistance to students through group and individual counseling, both personal and academic. Self-empowerment workshops were aimed at improving student self-esteem, motivation and confidence (Appendix G). Through these workshops students were able to gain a stronger understanding of themselves, their role in the workplace and in society at large. Student progress was evaluated on a monthly basis and a formal evaluation form was completed and signed by

the instructor, student and advising specialist.

PLACEMENT

The Placement Specialist was responsible for developing a specialized employment program for the Career target population. The first step in the process was to determine the needs, abilities and limitations of the client population. This was achieved through in-depth interviews with each student. The results of the interviews revealed that program participants had a wide range of limitations. These problems posed significant barriers to employment. The following is a sampling of negative factors found to be common to most of the students:

- Low self image
- Weak work ethic
- Absence of positive attitudes
- Resistance to structure and authority
- Lack of financial means of support
- Lack of reliable transportation

The majority of students were from a socio-economic level in which failure and defeat were recurring themes in their lives. In order to assure a greater probability of success, each student would have to undergo a catharsis resulting in a positive, goal-oriented individual. In order to bring about positive changes, the problem of self-esteem had to be addressed effectively. The task of self-empowerment was the primary duty of the counseling component but, because it was closely allied with the placement process, it often required a coordinated effort between placement and counseling.

Successful placement required the development and implementation of a well-focused strategy. The strategy devised used a series of classes designed to target problematic areas identified as barriers to the success of the students (Appendix H). Workshops were balanced with concepts and concerns identified as critically needed by local employers. To legitimize workshop concepts and provide positive reinforcement, students were afforded the opportunity to experience real work situations during field trips to manufacturing plants and fabrication facilities. Mentors from industry were involved with CAREER as guest speakers, arranged and conducted site visits and held group discussions. Placement of students has been effective and has continued to enhance employer confidence and support for the programs and services of the El Paso Community College. Graduates are very well received by local industries. Employers now regard CAREER graduates as among the best in the following key areas:

- Attitude and Motivation
- Work Ethic
- Vocational/Technical Training
- Knowledge of Work Place Environment and Demands
- Reliability

Not all barriers to employment originated with the students. There were also barriers to employment among some of the employers in the industrial community. The main problem encountered was many employers questioned our ability to deliver a motivated, highly-qualified candidate. It took countless visits to build good rapport and sway their thinking in our favor.

A placement rate of sixty-nine per cent was achieved. Placements were made in occupational areas directly related to the training received at an average hourly rate of \$5.22 (Appendix I). Of the remaining graduates, thirteen percent returned to school, six percent relocated, and we are working to place the remaining twelve percent.

SUMMARY

In summary, the objectives of CAREER were achieved; four programs were implemented to train workers in technology occupations applicable to the local job market. One hundred forty-five students were enrolled in CAREER - one hundred percent were disadvantaged adults in need of training or retraining, single parents, or females seeking non-traditional occupations.

Sixty-four percent of enrollees successfully completed training which is twenty-one percent below the CAREER objective. As noted in Appendix E, the main deterrent to retention was insufficient financial resources. The majority of our students who dropped out, did so to obtain employment because of financial necessity. Sixty-nine percent of CAREER graduates are employed and twelve students have returned to school full-time to pursue an associates degree.

Eighty-three percent of CAREER graduates rated the program eight or better on a 1-10 scale.

Employers rated CAREER graduates "average" or "above average" in skills and indicated they would look to the Advanced Technology Center for additional employees in the future.

Faculty rated training as "useful" to "very useful" in teaching adult and other target populations.

ObjectiveFinal Measure

Strengthen 2 existing programs designed to train workers and technicians in high technology occupations to ensure applicability to local job market and to maximize equivalency.

COMPLETED

Develop 2 new CAREER programs which meet labor market needs designed to train individuals in high technological occupations.

COMPLETED

90 students enrolled in CAREER programs.

145 STUDENTS ENROLLED

Achieve 100% enrollment from individuals who fit one or more of the classifications: handicapped; disadvantaged adults who are in need of training; single parents; and males or females seeking non-traditional occupations

ACHIEVED 100% ENROLLMENT FROM SPECIFIED CLASSIFICATIONS

85% of enrollees successfully completed training

64% COMPLETED TRAINING

90% of graduates placed

69% OF GRADUATES PLACED

Achieve 25% return rate of graduates for continuing education

13% OF GRADUATES RETURNED TO EPCC FOR CONTINUING EDUCATION

Ensure that CAREER curricula effective and useful to participants and employers

83% OF PARTICIPANTS RATED PROGRAM 8 OR BETTER

EMPLOYERS RATED PROGRAMS "AVERAGE" TO "ABOVE AVERAGE"

Provide college faculty and staff with training in "self empowerment" and with in-service in the special needs of target populations

100% OF FACULTY RATED TRAINING AS "USEFUL" TO "VERY USEFUL"

APPENDIX A

FOLLOW UP SURVEY

The follow-up survey was distributed to employers and thirteen responded as follows:

	Below Average	Average	Above Average
Employee skill/competency		5	8
Employee Attitude / Work ethic		5	8
Employee's potential for Advancement		7	6

APPENDIX B

Software

Writing Skills Series INT2365B	Queue, Inc.
Practical Vocabulary	338 Commerce Drive
Punctuation Review	Fairfield, Ct. 06430
Tenses of Verbs	
Parts of Speech I & II	
Principle Parts of Verbs	
 Fraction Series	 Microcomputer Workshops
Decimal Series	225 Westchester
	Portchester, N.Y. 10573
 Reading Strategies	 EDL
Quantum Series	P.O. Box 36537
Language Clues Study Guide	Albuquerque, N.M. 87176
 Math Cue	 Baker, Rogers, Van Dyke
	Saunders College Publishing
	210 West Washington Square
	Philadelphia, P.A. 19105

Textbooks

Master Student - 5th Edition	David Ellis
	College Survival, Inc.
	P.O. Box 83061
	Rapid City, S.D. 57709
 Arithmetic - 4th Edition	 Baker, Rogers, Van Dyke
	Saunders College Publishing
	210 West Washington Square
	Philadelphia, P.A. 19105

APPENDIX C

STUDENT EDUCATIONAL PLAN
ADVANCED TECHNOLOGY CENTER
CAREER GRANT PROGRAM

NAME: _____

COURSE: _____

SS# _____

INSTRUCTOR: _____

Learning Objectives: _____

BASIC SKILLS TO BE ADDRESSED

Area of Concentration: Math

Required Skills:

Present Skill Level:

Plan of Action:

Area of Concentration: Reading

Required Skills:

Present Skill Level:

Plan of Action:

APPENDIX D

ADVANCED TECHNOLOGY CENTER CAREER GRANT

STUDENT PRE/POST ASSESSMENTS

NAME OF STUDENT	TESTING	READING TEST SCORES	
		Pre-V	Pre-C
		Post-V	Post-C
Chavez, Bernadro	TABE	6.0	-----
		12.9	11.1
Duenez, Jose	TABE	9.0	-----
		12.9	12.9
Marquez, Manuel	Nelson	9.6	3.8
		11.4	4.4
Ortiz, Irma	TABE	9.1	9.6
		11.1	11.1
Solis, Christopher	TABE	2.5	3.3
		9.0	----
Vargas, Victor	TABE	7.4	3.7
		9.0	10.9
Gandara, Argelia	TABE	7.3	7.7
		11.1	9.6
Quezada, Alvaro	TABE	10.9	12.7
		12.9	12.7

Pre-V = Pre-Vocabulary Assessment
Post-V = Post-Vocabulary Assessment

Pre-C = Pre-Comprehension Assessment
Post-C = Post-Comprehension Assessment

PAGE 2
CAREER GRANT STUDENT
PRE/POST ASSESSMENTS

NAME OF STUDENT	TESTING	READING TEST SCORES	
		Pre-V	Pre-C
		Post-V	Post-C
Amaya, Ricardo	Nelson	5.9	5.5
	TABE	3.4	6.4
Barrientos, Leticia	Nelson	9.1	6.0
	TABE	8.2	----
Garcia, Alex	Nelson	11.1	5.5
	TABE	8.6	12.9
Hernandez, Gilberto	Nelson	9.9	3.8
	TABE	5.1	----
Martinez, Norma	Nelson	9.1	3.8
	TABE	13.2	10.7
Nunn, Cynthia	Nelson	6.2	11.2
	TABE	7.3	9.1
Perez, Ralph	Nelson	10.4	4.9
	TABE	10.1	10.4
Vasquez, Joe	Nelson	6.5	4.4
	TABE	9.4	12.9
Williamson, Rosemarie	Nelson	11.6	7.3
	TABE	12.9	12.9

Pre-V = Pre-Vocabulary Assessment
Post-V = Post-Vocabulary Assessment

Pre-C = Pre-Comprehension Assessment
Post-C = Post-Comprehension Assessment

PAGE 3
CAREER GRANT STUDENT
PRE/POST ASSESSMENTS

<u>NAME OF STUDENT</u>	<u>TESTING</u>	<u>MATH MASTERY LEVEL</u>	<u>/ %</u>
Amaya, Ricardo	ATC	52%	75%
Baquera, Rodolfo	ATC	73%	100%
Barrientos, Leticia	ATC	33%	83%
Camacho, Raul	ATC	18%	92%
Carlos, Leopoldo	ATC	66%	98%
Carmona, Ernest	ATC	26%	95%
Chavez, Bernardo	ATC	39%	97%
Chavez, Fred	ATC	68%	98%
Cobb, Donny	ATC	53%	92%
Damman, Herman	ATC	17%	97%
D'Agostino, Mario	ATC	54%	96%
Davis, Richard	ATC	46%	97%
Diaz, Ralph	ATC	71%	90%
Edwards, Bruce	ATC	71%	97%
Franco, Robert	ATC	73%	87%
Galarza, Chuck	ATC	66%	96%
Gallegos, Rick	ATC	83%	93%
Garcia, Alex	ATC	50%	94%
Hernandez, Gilberto	ATC	60%	95%

PAGE 4
CAREER GRANT STUDENT
PRE/POST ASSESSMENTS

NAME OF STUDENT	TESTING	<u>continued</u>	
		MATH MASTERY LEVEL / %	
Hinojosa, Luis	ATC	76%	97%
Holguin, Roberto	ATC	85%	97%
Lazalde, Jose	ATC	35%	98%
Marquez, Manuel	ATC	47%	98%
Martinez, Norma	ATC	62%	91%
Martinez, Patricia	ATC	53%	96%
McCord, Yolanda	ATC	34%	87%
Mestas, Anthony	ATC	78%	97%
Miranda, William	ATC	85%	98%
Moorhead, Mark	ATC	68%	97%
Moya, Gilberto	ATC	58%	96%
Murillo, Hector	ATC	72%	89%
Nunn, Cynthia	ATC	50%	84%
Perez, Ralph	ATC	53%	97%
Reyna, Janet	ATC	07%	89%
Rodriguez, Daniel	ATC	75%	98%
Romero, Manuel	ATC	54%	92%
Samaniego, Alex	ATC	49%	83%
Sanchez, Henry	ATC	35%	96%
Simanikas, John	ATC	58%	100%
Solis, Jesus	ATC	37%	95%

PAGE 5
CAREER GRANT STUDENT
PRE/POST ASSESSMENTS

NAME OF STUDENT	TESTING	<u>continued</u> MATH MASTERY LEVEL / %	
		<u>MATH MASTERY LEVEL / GRADE</u>	
Vasquez, Joe	ATC	63%	89%
Ware, Henry	ATC	51%	81%
Williamson, Rosemarie	ATC	35%	94%
Black, Bruce	TABE	7.7	9.1
Crawford, Michael	TABE	9.0	11.5
Duenez, Jose	TABE	9.4	12.9
Hansen, Jack	TABE	7.1	8.3
Morales, Tommy	TABE	8.6	9.6
Ortiz, Irma	TABE	7.6	8.6
Vargas, Victor	TABE	5.5	9.0

Percentage of students that were post-assessed and mastered the various content areas in math (after remediation):

36/50 72%

Students Exempt from required Math post-assessment:
(Students who mastered math competencies on pre-assessment, required no remediation).

Blanco, Alonso	TABE	12.9	Exempt
Bogue, Lorraine	TABE	12.9	Exempt
Bowler, Paul	ATC	98%	Exempt
Chahine, Terry	TABE	12.9	Exempt
Gandara, Argelia	TABE	11.5	Exempt
Munoz, Jose	ATC	93%	Exempt
Olsen, Eric	TABE	12.9	Exempt
Ramirez, Ventura	TABE	12.9	Exempt
Sanchez, Victor	TABE	12.9	Exempt

APPENDIX E

EL PASO COMMUNITY COLLEGE / ADVANCED TECHNOLOGY CENTER CAREER GRANT

<u>COURSE</u>	<u>REGISTERED</u>	<u>DROPPED</u>	<u>GRADUATED</u>	<u>GRADUATES EMPLOYED</u>	<u>GRADUATES ATTENDING SCHOOL</u>	<u>GRADUATES RELOCATED</u>	<u>GRADUATES UNEEMPLOYED</u>
PLASTICS	56	16	40	30	2	2	6
MACHINE SHOP	51	19	32	19	6	3	4
EQUIPMENT MAINT.	32	14	18	13	3	1	1
CNC	06	03	03	02	1	0	0
	—	—	—	—	—	—	—
TOTALS	145	52	93	64	12	6	11

APPENDIX F

ADVANCED TECHNOLOGY CENTER / CAREER GRANT
REASON FOR NON-RETENTION

UNABLE TO CONTACT	08
OBTAINED FULL-TIME EMPLOYMENT/ TO SUPPORT SELF/FAMILY PRIOR TO COMPLETION OF TRAINING PROGRAM	28
CHANGED TRAINING GOALS	04
RELOCATED	05
RETURNED FULL-TIME TO SCHOOL	04
JOINED THE U.S. ARMY	02
LEGAL PROBLEMS	01
	52

APPENDIX G

ADVANCED TECHNOLOGY CENTER CAREER GRANT SELF-EMPOWERMENT WORKSHOPS

- I. INTRODUCTION TO SELF-ESTEEM
- II. THE IMPORTANCE OF SELF-ESTEEM
- III. SELF-CONCEPT IS DESTINY
- IV. THE QUESTION OF SELFISHNESS/LIVING CONSCIOUSLY
- V. LIVING CONSCIOUSLY II & III
- VI. SELF-ACCEPTANCE I & II
- VIII. ASSESSING BEHAVIOR/LIBERATION FROM GUILT
- IX. INTEGRATING OUR YOUNGER SELVES
- X. LIVING RESPONSIBLY
- XI. LIVING AUTHENTICALLY
- XII. NURTURING THE SELF-ESTEEM OF OTHERS
- XIII. YOUR IMPROVED LIFE/THE DIFFERENCE IT MAKES

APPENDIX H

ADVANCED TECHNOLOGY CENTER / CAREER GRANT EMPLOYMENT SKILLS WORKSHOPS

1. Pre-Employment Skills Workshop - The PESW is the first step in training the student in successful job seeking strategies and techniques.
2. Resume Workshop - Instruction and advice on basic resume formats and proper content. Students will be given samples and preparation guides.
3. Interview Workshop - Trains student in successful interview strategies and ideas.
4. Mock Job Interview - A simulated video taped job interview. Affords the student a unique opportunity to view him/her self, as an actual employer would during an interview. After the taping, the student undergoes a performance critique for the purpose of identifying weaknesses, and to help build student confidence.
5. Success in the work place - (Post-employment Workshop) This workshop is designed to teach the student strategies for success on the job, and to address such areas as attitude, employee responsibilities and how to be a competitive and productive employee.
6. Communication/Situation Exercise - Small group discussion for analyzing and solving hypothetical employment related problems.
7. Research Companies - Students are asked to research a list of companies (visits, etc.) in the field of training.
8. Presentation - Students present their research to the class. This presentation serves as a confidence builder, as well as developing useful information about targeted companies.

APPENDIX I

EL PASO COMMUNITY COLLEGE ADVANCED TECHNOLOGY CENTER CAREER GRANT STUDENT GRADUATES - PLACEMENT DATA

COURSE: Plastic Injection Molding
GRADUATION: 08/15/90

STUDENT	PLACEMENT	START DATE	WAGE	POSITION
Cynthia Aragon				
Oscar Armenta	City of El Paso Fire Dept.	08/20/90	\$8.33	Dispatcher Trainee
Michael R. Brown	Specialty Packaging	08/06/90	\$6.75	Spvsr.Trainee
Carlos E.Contreras				
Luis E. Gomez	ELCOM	09/19/90	\$5.20	Troubleshooting
Alicia Lopez	ELCOM	08/31/90	\$5.20	Quality Control
Jose A. Macias	ELCOM	09/19/90	\$5.00	Mach. Opr.
Roberto Marquez				
Carlos Palacios				
Stephen V. Ramirez	ELCOM	09/19/90	\$5.20	Mach. Opr.
Lyle E. Welch	ELCOM	09/19/90	\$5.20	Machine Operator

COURSE: Machine Shop Fundamentals
GRADUATION: 08/03/90

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Christian Grunewald				
Michael T. Crawford	Tri-Way Mfg.	04/16/90	\$3.85	Machinist Hlpr.
Alvaro Quezada				

COURSE: Equipment Maintenance
GRADUATION: 07/20/90

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Oscar Armenta	Chad Industries	04/ /90	\$4.50	Maint.
Carlos Leyva	American Industries	07/16/90	\$4.10	Maint.Helper
Luis A. Munoz	Continental Sprayers	07/10/90	\$5.25	Machine Technician
Erik F. Olsen	Air Controllers of El Paso	06/11/90	\$5.50	A/C Mechanic

COURSE: Machine Shop Fundamentals II
 GRADUATION: 06/13/90

STUDENT	PLACEMENT	START DATE	WAGE	POSITION
Bruce Black	Attending E.P.C.C. credit courses			
Alonzo Blanco	Attending E.P.C.C non-credit courses			
Argelia Gandara	Attending E.P.C.C. credit courses			
Martin Montoya				
Ventura Ramirez	Industrial Fabrication	07/10/90	\$6.00	Machinist
Gary K. Rea	Industrial Fabrication	07/10/90	\$6.00	Machinist
Roberto I. Rodriguez	Border Steel (has been employed/waiting a transfer to Machinist)			
Christopher Solis	Relocated			
Victor Vargas	Levi-Strauss		\$7.00	Q.A. Inspector

COURSE: Plastic Injection Molding
 GRADUATION: 05/02/90

STUDENT	PLACEMENT	START DATE	WAGE	POSITION
Tracy Chahine	Attending UTEP Credit courses			
Lorraine Bogue	Relocate			
Jose Duenez	Eureka Plastics	05/02/90	\$6.95	Moldsetter
Jack Hansen	Garden America	05/08/90	\$4.10	Mach. Opr.
Tommy Morales	Continental Sprayers	05/02/90	\$4.00	Mach. Opr.
Gilbert Moya	Elcom Inc.	05/16/90	\$5.00	Mach. Opr.
Yolanda McCord	Crown City Plating(Calif.)	08/16/90	\$5.15	Q.C. Tech.
Irma Ortiz	Golden Triangle		\$5.71	Q.A.
Victor Sanchez	Advanced Custom Molders	06/18/90	\$5.50	Spvsr.Trainee
Gerardo Villalobos	Attending U.T.E.P. credit courses			

COURSE Machine Shop Fundamentals
 GRADUATION: 04/06/90

STUDENT	PLACEMENT	START DATE	WAGE	POSITION
Ricardo Amaya	GPI Inc.	05/18/90	\$6.00	Machinist
Bernardo Chavez	EPCC Credit Courses / Texas Rehabilitation Commission			
Bruce Edwards	Plainfield Stamping	04/23/90	\$5.00	Mach. Trainee
Alex Garcia	Attending E.P.C.C. Cedit Courses			
Anthony Mestas	Attending School			
Cynthia Nunn	Leaving/military spouse			
Mark Moorehead	Foster Tool & Die	08/22/90	\$6.00	Tool & Die App.
Ralph Perez	Snapp Tool & Die	04/05/90	\$5.00	Machine App.
Jose Vasquez	Optical Training with father			

COURSE: Equipment Maintenance
GRADUATION: 04/06/90

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Rodolfo Baquera	Attending EPCC credit courses			
Richard Davis	Elcom	06/02/90	\$5.20	Machine Opr.
Paul Bowler	El Paso Die Cast	04/04/90	\$5.50	Maint. Tech.
Jesus Solis	Attending EPCC credit courses			

COURSE: Machine Shop Fundamentals
GRADUATION: 02/26/90

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Herman Damman	No phone contact			
Gilberto Hernandez	Dynamic Tool & Die	02/19/90	\$4.00	Mach. Trainee
Luis Hinojosa	unemployed			
Roberto Holguin	Elcom Inc.	04/16/90	\$6.00	Mold Tech. App.
John Simanikas	Dynamic Tool & Die	02/19/90	\$4.00	Mach. Trainee
Bruce Taylor	EPCC - Project-Career Program			

COURSE: Equipment Maintenance
GRADUATION: 02/14/90

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Ralph Diaz	CHAD Industries	02/19/90	\$5.00	Supervisor
Ricardo Gallegos	Findley Industries	02/19/90	\$6.00	Mech. Trainee
Jose Lazalde	Handgards, Inc.	05/21/90	\$4.25	Shipping/Recvng.
William Miranda	Will be leaving town			
Harry Ware	EPCC - Credit Courses			

COURSE: Plastics Injection Molding
GRADUATION: 02/21/90

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Leticia Barrientos	Plainfield Stamping	03/05/90	\$5.25	Q.A. Tech.
Ernest Carmona	Continental Sprayers	08/13/90	\$4.05	Mach. Opr.
Donny Cobb	Southern Tech. Plastics	02/29/90	\$5.50	Mold Tech.
Roberto Franco	Southern Tech.	04/11/90	\$5.75	Mold Setter
Charles Galarza	Elcom	04/08/90	\$5.00	Mach. Opr.
Patricia Martinez	El Paso Plastics	03/01/90	\$4.00	Q.A. Tech.
Hector Murillo				
Alex Samaniego	Parana	07/15/90	\$8.50	Mold Changer & Set-up Suprv.
Henry Sanchez	ELCOM	04/12/90	\$6.40	Die Setter
Rosemarie Williamson	Garden America	04/03/90	\$3.50	Mach. Opr.

COURSE: Plastics Injection Molding
 GRADUATION: 12/11/89

STUDENT	PLACEMENT	START DATE	WAGE	POSITION
Raul Camacho	Relocate			
Carlos Leopoldo	Border Adhesives	03/05/90	\$4.00	Maint.
Fred Chavez				
Mario D'Agostino	Parana Supplies Inc.	01/23/90	\$5.20	Mach. Opr.
Manuel Marquez	CHAD Ind.	03/01/90	\$4.00	Mach. Opr.
Norma Martinez	Attending E.P.C.C. credit courses			
Janet Reyna	Elcom	01/23/90	\$5.00	Mach. Opr.
Daniel Rodriguez	Southern Tech. Plastics	12/13/89	\$5.25	Mold Tech. Trainee
Manuel Romero	Elcom	01/22/90	\$5.00	Mach. Opr.

COURSE: Machine Shop Fundamentals
GRADUATION: 10/02/89

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Candido Elenez	EPCC - Advanced Tech. Ctr.	10/30/89	\$5.39	Lab Assistant
Tom Lippert	Industrial Fab. Services	10/29/89	\$5.25	Mach. Maint. Trainee
Jose Munoz	Handgards, Inc.	08/21/89	\$5.00	Mach. Maint. Trainee
Hector Schaffino	Triumph Ind.	10/18/89	\$4.00	Mach. Trainee
Alfredo Tovar	Elcom	04/23/90	\$5.00	Die Maint.

COURSE: Equipment Maintenance
GRADUATION: 09/13/89

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Santiago Barrio	YMCA	11-01/89	\$4.50	Maintenance Tech.
Michael Coltharp	Medley Material Handling	10/26/89	\$5.25	Hydraulic Mach. Helper
John Fredricks	Continental Sprayers	10/02/89	\$5.45	Maintenance Tech.
Alfonso Lopez	Hatch Ind.	11/07/89	\$6.25	Mach. Tech.
Maria Waters	International Paper	06/18/90	\$5.50	Mach. Opr.

COURSE: CNC - Introduction to Milling Centers
GRADUATION: 12/15/89

<u>STUDENT</u>	<u>PLACEMENT</u>	<u>START DATE</u>	<u>WAGE</u>	<u>POSITION</u>
Silverio Anguiano	GPI Inc.	03/20/90	\$5.00	CNC Opr.
Manuel Porras	CHAD Ind.	02/28/90	\$4.00	Mach. Opr.
Peter Smerthka	EPCC - Credit Courses			

D:PD,FC

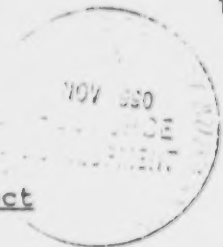
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El Paso Community College

Career Program

Summative Evaluation of 1989-1990 Project



Introduction

During 1988-1990 period, El Paso Community College made significant strides in the establishment and operation of the CAREER project. CAREER provided a series of intensive short term job training programs which were directly linked to EPCC's existing programs. Evaluation findings from January 1989 through September 1990 project period are summarized in this report.

For each phase of the assessment, evaluation methodology specified in the funded CAREER proposal was followed in order to maintain objectivity, coherence of findings, and observations that might serve as a basis for improvement to the project. The evaluator emphasized not only specific achievements, but moreover, processes by which they were attained. Management processes are viewed in this framework as essential to assessing the CAREER Program, since they can continue to function for efficiency and quality beyond the explicit provisions of implementation strategies and activity objectives in the project in which they have originated. Moreover, they serve to link institutional long-range plans in an active manner with project objectives and implementation strategies. Thus, both formative and summative evaluation were used in the review of the EPCC's CAREER project.

Prior to the final summative evaluation visit, two formative evaluation visits to EPCC were conducted during the project period

in order to monitor specific tasks completed achievements. This report focuses on the overall project progress, as well as the impact of the CAREER as a whole. Major issues affecting the future of CAREER project, as addressed in the project proposal and the previous Formative Evaluation Report were also considered.

Contemporary studies in project evaluation emphasize the importance of shared goals among project participants, and of close consonance between the goals of participants and the goals that are part of formal project planning. The spirit of cooperation in the CAREER project was particularly noteworthy in this regard. Project personnel were eager to assist in the evaluation, as appropriate, and appeared to welcome the suggestions of the external evaluator for strengthening the project.

Dr. Robert Shepack, President of EPCC, Dr. Enrique Solis, Vice President of Instruction, Dr. Diane Troyer, Dean of Business and Technology, Mike Roark, Director of Advanced Technology Center, and Carol La Fleur, CAREER project Coordinator, gave prominence and visibility to the evaluation process by emphasizing its importance and arranging for ready access to critical information. Interviews scheduled for the site visits were coordinated efficiently, which allowed the evaluator to make maximum use of available time. Preparation by all of the individuals involved with the four component project activities, as well as the CAREER faculty and staff, allowed the visits not only to proceed smoothly, but also to focus on the project's progress in more detail than would otherwise have been possible. The evaluator is indebted to the Project's faculty: Jim Dickens, Endre Kozma, Larry Hartman, Tony Portillo

and Robert Weirich and to the project staff: Fred Cavalleres, Angie Jimarez, Kathy Ortega and Isabel Pinon for their assistance, in providing extensive information and in discussing project activities frankly and openly, with a view towards potential new strategies for future operations. Thorough review of achievements detailed in CAREER project was enhanced by the willing participation of the faculty and staff in the evaluation process. Moreover, their cooperation greatly facilitated the formative and summative aspects of the evaluation. The candor of all of the project participants allowed for greater depth of observation, and consequently, a stronger basis for assessment, than would have occurred otherwise. Commitment of the institution's Chief Executive Officer, Robert Shepack as well as all of the CAREER faculty, staff and others occupying critical positions in the institution for project success was clearly demonstrated.

CAREER Project Background

The CAREER program was designed to develop and implement a cluster of intensive, short-term training programs focusing on the needs of the economically and educationally disadvantaged population residing within EPCC's service area. These training programs were to provide not only employment opportunities upon completion, but also a linkage to existing degree and certificate programs offered by the College. In this manner, the College sought to address the issue of short-term job training leading to "dead end" jobs rather than meaningful careers. The program was also seen as facilitating the recruitment, remediation, career planning, training, job placement, and follow-up of a predominantly

minority population. Heavy emphasis in the program design was placed on academic skills building and career counseling as pre-requisites for success in technical training. The intake component involved comprehensive assessment of basic skills readiness (i.e., reading, writing, and computational skills), as well as a pre-training remediation phase designed to ameliorate these deficits. The basic skills remediation component was offered, in order to improve access for that El Paso disadvantaged population.

One of CAREER's most exciting facets has been the alignment of technical training programs with the college's technical degree programs, providing for the "banking" of academic credits for future educational advanced standing. Through this project and related efforts, EPCC had sought to place itself in the forefront of community education by establishing a unique feeder system for technical and career-oriented instructional programs.

Programmatically, CAREER sought to establish a cluster of intensive, short-term, comprehensive job training programs, emphasizing a dual approach to employment readiness: a focus on entry-level technical training and subsequent, on-going, part-time continuing education to improve career opportunities through a career-ladder process. To the extent practicable, the overall occupational training component made use of flexible schedules (e.g., open entry/open exit scheduling), student-centered learning strategies, technology-based delivery systems (e.g., computer-based instruction), and opportunities for credit awards through competency assessment.

Many evaluations, but not all of them, involve a quantitative component, in which statistical or data-reduction skills and conceptualizations are central. But in all evaluations another component takes precedence over the quantitative: namely, concern for the general features of the evaluation design and the broad justification of the framework, which might require much detailed quantitative fine structuring. CAREER in its establishment proposed of a series of intensive, short-term job training programs which were directly linked to the College's existing programs. Using a structure of open-entry, individualized and competency-based instruction, the project was designed to provide students achievable educational goals and offer them practical steps first to employment and continuing education. Different from the other job training programs typically provided, CAREER was distinguished by a number of factors:

- the training programs were totally integrated into the central mission of the college
- the training was supported by an individualized approach to each student
- group and individual instruction were provided
- leaders from business, and industry were involved in curricula development, job placement and program evaluation
- and faculty were totally involved in the design, development and evaluation of the programs.

Evaluation Methodology

Survey, needs assessment or diagnostic designs, while important in educational environment are not the focus of this

evaluation. How effective was the CAREER program? Did the project change attitudes toward learning? Did the project change attitudes toward working? Did the instruction provided result in competency? Are the results engendered in CAREER project better than the traditional vocational education program? These are the types of questions that are of concern in this evaluation. Summative designs are not only important in their own right; they also set many of the parameters for future program operation.

The general task of designing an evaluation study to answer questions similar to those posed above should be divided into a number of sub-steps including: evaluating the objectives of the program, structuring the assessment so that outcomes can be observed and measured, selecting dependent variables, gathering evidence, and analyzing data. While proper concern for each of these sub-steps is important to a design which engenders interpretable, unambiguous data for decision making, this evaluation concentrated largely upon the problem of achievement, rather than upon selecting dependent measures, implementing a program, or analyzing data. It is assumed that any innovation being evaluated has intended aims or goals and that these can and should be made explicit. It is further assumed that dependent measures can be identified to assess whether the intended outcomes are manifested. Finally, it is assumed that data gathering in the context of an evaluation study can be summarized and analyzed in a number of appropriate ways.

For this project, the CIPP (Context-Input-Process-Product) Evaluation Model, pioneered by Stufflebeam, Popham, Scriven and

others and used extensively to evaluate federally supported projects, was used. The model encompasses both formative and summative aspects of evaluation. According to the model, evaluation is viewed as a set of sequential activities: delineating (defining), obtaining (acquiring), and providing (communicating) useful information for judging decision alternatives. Thus, evaluation becomes a continuing process. Four major considerations are used by the evaluator to formulate recommendations:

- Context Evaluating needs that underlie the project, and planning decisions designed to identify, define, and assess the needs.
- Input Evaluation of project design, its structure and procedures
- Process Evaluation of project operations through monitoring of project activities
- Product Evaluation of project outcomes and results based on project objectives and evaluation measures

Applying this methodology to EPCC's CAREER project, the evaluator utilized standards of technical adequacy, utility, and cost-effectiveness to check the Activity objectives against the requirements of Context-Definition-Acquisition-Communication.

Correspondingly, objectives for the first visit were to acquire baseline data with which to assess project start-up performance and to identify early structural problems, as well as examining the formative aspects of feasibility strategies underway or contemplated, and organizational climate. Components of input

(evaluation of the soundness of project design, its structure and procedures) and process (evaluation of project operations through monitoring on-going project activities) were emphasized during the interim visit. To be sure that the project was on track with the established schedule, review of specific accomplishments was also undertaken at that juncture, but recognizing that emphasis on product would primarily characterize the final visit. Evaluation emphasis moved from formative to summative considerations throughout the course of the visits.

Apart from the assessment of readily available CAREER data such as student attendance and performance information, policies, and procedures and guidelines, memoranda, financial records, agreements, and the like, another source for collecting evaluation information was through the job analysis process. Job analysis seeks to delineate the duties, requirements and conditions of jobs in a systematic way. Job analysis is useful in identifying both instructional components and effectiveness criteria for training programs. In order to train a person for a job, it is important to know what tasks the individual will have to perform and what specific skills; knowledge and other characteristics are required to perform them. Job components can be organized in a meaningful way to form the basis for the training curriculum. Measures developed to evaluate the effectiveness of the training strategies focus on the same job important tasks and skills.

Until recently, job analysis was used more frequently by industry and the military for personnel selection and placement for the job and employer evaluation than in training and training

evaluation. However, with shifts in the nature of training demands and with the CAREER's projects emphasis on training by objectives, competency performance based on the specific data has become increasing a more important concern.

Job-analysis methods included in this assessment included interviews and observations. These were relatively unstructured; the participants were asked to provide information about themselves and their training in their own words. Interviews were conducted with individual students and with a number of participants in group settings.

The major technique of data collection used in this evaluation was the semi-structure interview. By adopting a semi-structure interviewing technique as opposed to a structured interview it was hoped that the respondents themselves (administration, faculty, staff, students) would volunteer relevant factors for questioning and probing as well as supplying answers to the questions. The free response question is especially useful where the researcher has limited knowledge as to the kind of answers a particular questions will provoke and where he is interested in what the respondents will volunteer on a subject before specific prompting.

It is important to note in this study that there is a distinction between evaluation and design. Evaluation is concerned with judgments of merit or worth, and design is concerned with the conditions under which data are gathered. A premise of this study is that valid, empirical data should provide some input for evaluative decisions. It must be stressed, however, that data, in and of themselves, do not result in judgments or decisions. There

is, in essence, an important difference between the process of gathering data to aid in decision making and the decisions that result. So it is with the design of evaluation studies to judge programs, policies, or practices. Data collection is not evaluation. Evaluation occurs only when data are compared to some standard and a judgement of worth is made.

In the final summative phase, emphasis was placed on an overview of specific accomplishments relative to the plan of operation; new and emerging directions were considered, and the overall impact of the project and was assessed, and areas for future development were identified. The evaluator also considered, particularly on the final site visit, ways in which the institution was responding to the findings and results of the project, and its internal and external evaluation components.

Eight days total were spent by the evaluator at EPCC in the Advanced Technology Center or interviewing El Paso area, with additional days off-site working reviewing objectives, performance measures, implementation strategies and time tables, project data and documents, records, and progress reports. Analysis of data, findings, and overall project progress occurred both on- and off-site.

Need for the Project

El Paso Community College's CAREER Program, funded in part through the U.S. Department of Education's Cooperative Demonstration Program, has reached the end of its federal funding. The project was based on the need to develop and implement within the College's urban service area, a cluster of intensive, short-

term training programs designed to facilitate the recruitment, remediation, training, job placement, and follow-up of a disadvantaged, predominantly minority, population. By design, the CAREER program incorporated heavy emphasis on academic skills building as a prerequisite for technical studies and training. Increasingly, throughout the nation, career training, with though given to individuals' career mobility and job satisfaction, is supplanting traditional "job training", with its focus on entry-level skills alone. Through this project, EPCC sought to establish itself as a pilot institution, acquiring important experience from the project, and applying this expertise to a future.

There is no doubt in this evaluator's judgement a critical need for this type of project existed. Changes in the College's service area (i.e.: restructuring of the area's economy from labor intensive to high-tech manufacturing; role of twin plant operations and their impact on both sides of the border, and changes in immigration law) have caused area employers, to express the need for developing a cost effective cooperative educational effort.

The results of a survey, Table I, which follows taken by EPCC document the discrepancy between the need and the actuality:

Table I

Sample of Perceptions of El Paso Employers, Labor Organizations, Trade Councils on Critically Needed Cooperative Training

<u>Concern</u>	<u>% Indicating Need</u>
Need for assessment	64%
Need for instruction for high school equivalency diploma	59%

Need for basic skills instruction	70%
Need for bilingual instruction	69%
Need for speaking and listening skills	58%
Need for critical thinking skills	43%
Need for update skills to accommodate technological skills (produce, install, operate, or maintain high technological equipment).	71%
Need for support services	48%

Source: EPCC's Office of Institutional Research

El Paso SMSA is an economically depressed area with a high unemployment rate; 18% almost tripling the national rate. The region also lags behind the rest of the nation its economic growth. The continued devaluation of the Mexican peso (2293 pesos to the U.S. dollar) creates serious economic strains on the areas SMSA since EL Paso and Ciudad Juarez represent a total economic region. A sense of urgency exist throughout the service region. A concern that unless EPCC took a leadership role in providing for education-work linkages a major revitalization of area's economy could not occur.

Expectations were high among the business community interviewed that the next ten years will see EPCC offering many more short term job training programs to individuals intent upon entering employment after their training is completed. However, staff at EPCC acknowledge that this expectation presented a rather difficult and perplexing dilemma. Although there seems to be many good reasons more individuals ought to be enrolled in CAREER type programs, the fact is that the present and possibly future training project enrollments may show a sizable discrepancy between what

educators and employers think ought to be and what individuals who need this type of training will do. Prospective participants often say "no thanks" to short term training. Frequently they prefer to enroll for a year or two, in a program which will allow them to receive financial aid support from Federal and State sources.

By in large the data at EPCC shows significant proportion of its students will not complete two years or even one year; they will not graduate. They will leave the institution without a destination or a career path. Whereabouts unknown and future uncertain. A CAREER program would have made sense for many of these students, but they avoided it because they could not obtain financial support during the training.

Large numbers of students attending EPCC should be enrolled in CAREER type programs. The need for programs exist, the facilities are being developed, but the enrollment of future participants is unclear. The CAREER data suggest that significant numbers of adult students may avoid the job preparation programs, not because they find those opportunities distasteful but because of limits placed on providing financial support during the training. EPCC's low cost tuition should offer a legitimate way to acquire the training necessary for a meaningful employment. However, the educational bureaucracy which exists in the local, state and federal levels seems to prevent a larger scale implementation of CAREER effort.

Institutional and demographic trend data demonstrate that for the next ten years, EPCC will face unprecedented threats to institutional viability. The changing student mix and a scarcity of resources are expected to seriously tax institutional efforts,

at a time when the needs of students and the community will be especially acute. With a stated mission of reducing access barriers and providing educational services to the seriously disadvantaged populations of its service areas, EPCC will have to struggle to provide quality educational services.

Despite the serious limitations and difficult financial situation, EPCC has made significant strides, partially through CAREER project and other similar types of programs to develop more cost-effective operational programs. Through streamlined management and well planned use of technology, EPCC has been able to sustain its commitment to a reasonable, affordable tuition structure. However, operational budgets cannot be trimmed much further without endangering educational quality or disadvantaged student access. Though the need is still critical the question of continued support for CAREER project is at this time a very much of educational dilemma for the institution.

Project Implementation

In accordance with established procedures of the U.S. Department of Education, the CAREER project at EPCC has been structured to provide both direct management control of project activities through designated Project Coordinator, Carol La Fleur, as well as overall project management and articulation with top-level institutional administration through the involvement of Mike Roark, Director of Advanced Technology Center and Diane Troyer, Dean of Business and Technology. It was apparent to the evaluator on the initial, as well as subsequent visits, that Carol La Fleur's emphasis, as CAREER Coordinator, on orderly accountability

instruments was an important component of subsequent project success, since mechanisms were in place to assure smooth, clearly understood project operations. In addition, serving as CAREER Project Coordinator and Ms. La Fleur has promoted CAREER project awareness throughout the institution.

Carol La Fleur has maintained strong rapport with the CAREER faculty and staff, who not only have assumed operational responsibility, but also assumed possess accountability for components under their supervision. Issues relating to the CAREER project were discussed weekly with Director of Advanced Technology Center and Dean of Occupational and CAREER programs, and the faculty and staff met daily with the Project Coordinator to provide early indications of potential problem areas and emerging strengths, as well as to promote communication among various components of the project.

Interviews with project faculty, staff, and administration have confirmed that the project was well structured and carried out, and that all personnel had an understanding not only of project objectives and implementation strategies, but also of the manner in which they furthered the goals of the CAREER project.

An Attainment Ratings of the Major Project Components and Specific

Objectives

In this section are the findings of external evaluator employing a Likert Scale (1-5) using the following measures:

- 5 = very high completion demonstrated
- 4 = good completion demonstrated
- 3 = moderate completion demonstrated

2 = rather uncertain completion demonstrated

1 = slight or negligible completion demonstrated

on attainment level of each of the Activity Objectives found in the four major components. A comprehensive score for each component is included as well as a brief narrative capsule concerning the summative aspect of the component.

Component I: Curriculum Review and Development

<u>Activity Objective</u>	<u>Attainment Rating</u>
1. To develop DACUM-type teams for review, revision and development	5
2. To review and revise two existing programs	5
3. To identify two new training areas and begin development of two new programs	5
4. To initiate Computer-Assisted Instruction for occupationally specific basic skills	5
5. To develop motivational/job readiness curriculum for CAREER programs	5
6. To assess curriculum content and offer credit equivalency of CAREER graduates.	2
<u>Average Attainment Rating</u>	
4.5	

The curriculum development process employing the DACUM model appears to have been successful both from the standpoint of involving business/industry practitioners in the development of skill competencies, as well as in linking short-term collegiate level degree and certificate technical programs. This latter approach, which represents a key component of the project design, was important in ensuring that a career-ladder is made available to trainees.

Competency based instruction depends on the specification of desired competencies to be exhibited by the learner. The provision of time competency training to faculty and administrators, and identification of the competencies needed for each of the courses have been accomplished with considerable success. Defining just what students will be able to do when they have completed a course or a program is a major way of effecting instructional reform. The specifying of objectives and content of instruction; establishing of achievement criteria; defining of course learning units; identifying the learning elements within the units; and the constructing competency tests all helped produce a very effective curriculum..

An evaluation of curricula materials developed and interviews with both students and faculty documented to this evaluator that all of the basic principles of curriculum construction were followed. Data exists which demonstrates that a curriculum development process was used which employed: (1) faculty control with some measure of student participation; (2) periodic review and revision to ensure relevance; (3) reasonable balance between the technical theory and practical hands-on instruction; (4) student-centered rather than faculty-centered; (5) materials and standards within the scope of the students interest and ability to learn; (6) translation of content into meaningful, realistic objectives taught with sincerity and enthusiasm; (7) a broadened concept of acceptable and appropriate areas of concern including experiences, which were drawn directly from the a work environment.

Component II: Assessment and Counseling

<u>Activity Objective</u>	<u>Attainment Rating</u>
1. To assemble staff and resource persons for initiation of comprehensive intake and assessment services	5
2. To train CAREER intake and assessment staff on selected instruments and in college-wide support services	5
3. To initiate student recruitment activities	5
4. To initiate intake and assessment services	5
5. To establish pro-active counseling system	5
6. To implement Mentoring System	3
<u>Average Attainment Rating</u>	
4.6	

The assessment functions of CAREER project were intended to identify and evaluate participants abilities, interests, aptitudes, skills, and attitudes. Both the qualitative perceptions of participants and project staff and the quantitative data support the fact that the project was accomplished in assessment and appraisal. Project records document that information on each participant was collected and placed in individual's personnel folders. A number of standardized instruments (Nelson-Denny Reading Test, Test of Adult Basic Education) were used to measure the intellectual ability and academic aptitudes of the participants. The testing helped individuals make educational decisions and training selections that offered reasonable expectations for success. Further more the testing helped the staff learn more about the students and helped identify the participants would benefit from placement in the Projects basic skill program. It also provided the program staff with information

useful in planning the curriculum and in ensuring that courses met the educational needs of students.

In addition to ability testing the project employed an extensive interview process which coupled with test scores and competency levels identified by local industry representatives as essential for job proficiency became the basis for the development of individual education plan for each participants. Unless assessment results are used in counseling and guidance as the student encounter academic problems, there is little point in having an assessment process.

The prime function of the counseling component was to assist the CAREER participants in making decisions and resolving problems which affect their educational occupational and personal lives. The evidence suggest that it was very effective in filling this mission. Data shows that project counseling staff were concerned with assisting the students in understanding and evaluating their potentialities and limitations and in discovering and taking full advantage of their opportunities.

Countless interviews with participants reinforced the dynamic and purposeful relationship which existed between the counselors and project participants. The project enjoyed mutual participation of both counselors and students with the focus on helping each participant gain self-clarification and self-determination. The data suggest that project counselors performed many different tasks such as assisting students in making career choices, overcoming the hurdles which threaten academic progress, and assisting participants to discover their inner strengths and weaknesses.

Observations show that the counseling effort did not shy away from helping the students face many of the problems which arose from limited economic circumstances, interpersonal relationships and tensions, and the resolution of conflicting ethical and moral values with accepted social practices.

Component III: Instructional Delivery

<u>Activity Objective</u>	<u>Attainment Rating</u>
1. To provide competency-based, hands-on training in Plastics Technology, CNC, Industrial Maintenance and Machining.	5
2. To provide Occupationally Specific Computer-Assisted Basic Skills Instruction	5
3. To provide motivational/job readiness curriculum	5
4. Initiate instruction in new training areas	5
5. Evaluate effectiveness of instruction and modify as necessary	5
<u>Average Attainment Rating</u>	
5	

New program development, both as a specific deliverable of this project and as an institutional response to emerging problems, has been an important contribution of this project. The implementation of Plastic Injection Molding Operation, Equipment Maintenance Helper, Machine Shop Fundamentals and Computer Numerical Control Machine Operator career programs should substantially enhance the college's array of training options, while, at the same time, maintaining the important linkage between pre-employment non-credit training and the college's regular career-oriented academic programs. Developments of this sort

should help to promote the return of CAREER graduates for additional postsecondary education.

The CAREER program has made an impact on the level of education and training services provided by EPCC and the approach to the instructional delivery provided. The CAREER approach employed the following steps and processes: (1) identification of the participant's abilities and needs; (2) Definition of program goals and course objectives in terms of the students' needs and abilities; (3) the preparation of course materials and teaching strategies from the definition of competencies that job requires; (4) pretests before the learning begins and posttests afterward to measure the effects of the learning activities; (5) Evaluation of assessment results fed back to the participants to reenforce their learning activities. The evaluation was also used periodically to indicate what changes should be made in a given course, and even changes in an instructional unit.

There is not doubt in this evaluator's judgement that the instructional approach was successful. The CAREER model offered no easy panacea for all of the problems associated with providing instruction for this target population. The faculty could have received more sensitivity training to prepare them for some of the motivational and attitude problems encountered with the target population. More attention could have been devoted to development of instructional materials, to individualizing the instructional process, and to motivating students to work independently. A review of instructional units developed suggest that more problem-solving and critical analysis should have been included. However,

this is not to say that instructional achievements with this target population were not significant. The computer assisted instruction provided in the basic skills effort was most effective in integrating basic skills instruction. It allowed the students to work at their own pace and provided the instructors with information on student performance. Good instruction depends on making available of a number strategies. In addition to CAI CAREER project provided participants traditional classroom presentations. Writing skills were developed from technical instruction and students were able to received one on one tutorial assistance. Progress was monitoring against the criteria specified in the participants individual education plan.

Component IV: Follow-Up Services

<u>Activity Objective</u>	<u>Attainment Rating</u>
1. Establish Career job placement service with lifetime availability for CAREER Graduates	3
2. Provide employment transition services for all CAREER graduates to facilitate transition, especially during the first year of employment	2
3. Encourage and facilitate entry/re-entry of CAREER graduates into college credit programs and continuing education courses	3
<u>Average Attainment Rating</u>	
2.6	

Most of the participants and of all the employers interviewed seemed satisfied with the placement services provided by CAREER project. CAREER was established with the intention of serving the employers in El Paso by supplying them with well trained workers. The project need was ascertained by assessing employment trends and

needs and by surveying the employers. The project participants were provided with workshops and classes designed to eliminate employment barriers and to overcome problems that many of the participants had with self-esteem and self-empowerment.

The data collected by the project staff confirms that most of participants obtained employment in areas closely related to the program in which they were enrolled. The content of curriculum training supplemented by the positive reinforcement provided in the placement effort has resulted in "sixty nine percent placement". This is a good percentage of those who completed the CAREER training. In addition the thirteen percent who are still in school are enrolled in educational areas which related to the program that they began. The project to date has had a positive effect on a significant number of the participants.

However, the CAREER students relative success in finding employment does not address the other evaluation concerns of maintaining jobs in the areas for which they were trained. This is a far more controversial assessment. The question of one year or longer term effectiveness will depend on data which needs to be obtained in the future and on the specific definition of criteria for defining success. Does a low paying job qualify even if that is the job for which the student had been trained? The project needs to collect data on employment rates of participants and incomes of project graduates and nongraduates for a number of years before fair judgements can be made. Data may show that CAREER graduates have a number of advantages over the project drop-outs in the job market. It may not.

The establishment of CAREER job placement service with a lifetime availability is also a evaluation concern which is not assessable at this time. Research has shown that most occupational graduates have not been sanguine with the support they received from the College placement services in obtaining jobs. EPCC placement office could be the exception.

Identification and Classification of Data Variables

While a central premise of this evaluation design is that empirically derived evidence is a necessary prerequisite to summative, product evaluation, and evaluation study must include valid empirical data, it would be naive to assume that such data are the only relevant input for educational judgements. Factual evidence does not represent the sole criterion, or even only "rational" criterion for making project judgements. Deductive reasoning and other factors are influential and have been employed throughout this study. However, it is also important for an evaluator who has collected information in connection with an evaluation study to identify and classify the data variables in terms of its status and scale of measurement. While the evaluator could have provided outcome variables on tests scores and various opinionnaires this data has been reported in EPCC's final project report. Rather than repeat data the evaluator has elected to present only one appropriate analysis of participants performance in CAREER project and to highlight the additional quantitative data.

Table II which follows provides a summary analysis of Participant Progress.

Table II
Summary Analysis of Participant Progress
1988-1990

EL PASO COMMUNITY COLLEGE/ADVANCED TECHNOLOGY CENTER

CAREER GRANT

<u>Course</u>	<u>Regis- tered</u>	<u>With- draw</u>	<u>Grad- uated</u>	<u>Employed</u>	<u>Attending School</u>	<u>Relocated</u>	<u>Unem- loyed</u>
Plastics	56	16	40	30	2	2	6
Machine Shop	51	19	32	19	6	3	4
Equipment Maint.	32	14	18	13	3	1	1
CNC	06	03	03	02	1	0	0
TOTALS	145	52	93	64	12	6	11

Source: EPCC CAREER Project Records

Other significant data are highlighted below:

- A CAREER project placement rate of sixty nine (69) percent was achieved
- One hundred (100) percent of placements were made in occupational areas directly related to the CAREER training
- One hundred (100) per of one hundred forty-five (145) participants recruited were disadvantaged adults, single parents or females seeking employment in non-traditional occupations
- A CAREER project graduation completion rate of sixty four (64) percent was achieved
- Eighty-three (83) percent of CAREER graduates rated the program's performance eight or better 1-10 scale.

- . One hundred (100) percent of employers surveyed rated CAREER graduate "average or above average in job related skills and performance"
- . One hundred (100) percent of employers surveyed indicated that would consider hiring Advanced Technology Center graduates in the future

Major Changes in Program Emphasis

There were no significant changes in program emphasis during the CAREER project. Budget adjustments and implementation strategy revisions were made so that project tasks more closely related to activity objectives, but all of the changes were within the provisions of the Education Department General Accounting Regulations (EDGAR). Also, all of the changes were called to the attention of the external evaluator.

Project Personnel

Effective project management was well sustained by the organizational structure and reporting relationships at EPCC. Further, project organization was designed in order to maximize the benefits that each component might provide to the others.

The Project Coordinator, Carol La Fleur, reported directly to Mike Roark, Director of Advanced Technology Center and served as a member of the Advanced Technology Center's Management team. As the Director of the Advanced Technology Center, Mike Roark, a key senior executive at EPCC helped to provide leadership for the project, in close collaboration with of Diane Troyer, the Dean of Occupational and Career Programs. High institutional priority for

the project components and objectives was maintained, and they were smoothly integrated into the College-wide planning process.

Carol La Fleur coordinated the CAREER activities for maximally effective use of resources by tying project activities to the work and plans of the larger EPCC organization. The CAREER office maintained overall project accountability and control through appropriated systems of documentation and reporting. The evidence shows close liaison of CAREER project activities, institutional goals and long-range planning, and efficient use of personnel. A review of project documents revealed that all staff were thorough in accounting for their time.

Cost Allocations

In keeping with the CAREER requirements EPCC provided a share project costs through its own, non-federal sources. Cost allocations for federal funds that were involved are shown as follows.

	<u>Original Budget</u>	<u>Expended</u>	<u>Balance</u>	<u>% Unspent</u>
Salaries, Wages	\$212,164	\$203,516	\$ 8,648	4.08%
Fringe	\$ 33,946	\$ 34,543	(\$597)	-1.76%
Material/ Supplies	\$ 71,980	\$ 52,562	\$ 19,418	26.98%
Travel	\$ 5,000	\$ 3,060	\$ 1,940	38.80%
Equipment	\$ 0	\$ 16,101*	(\$ 16,101)	0.00%
Indirect	\$ 25,847	\$ 23,992	\$ 1,855	7.18%
TOTALS	<u>\$348,937</u>	<u>\$333,774</u>	<u>\$ 15,163</u>	<u>4.35%</u>

*This is not equipment but rather mediated materials and software

Personnel and Resources Utilized in the Evaluation

25% Match Analysis	Original Budget	\$348,937
	Required Match	\$ 87,234
	Expended as of 9-30	\$333,773
	Required Match	\$87,234

Several on-site visits were made to EPCC by the external evaluator. In the course of conducting the formative and summative evaluation, on-site interviews, observations, and examination of documentation and project evidence were employed. EPCC personnel listed below were interviewed or observed in connection with the CAREER project by the evaluator.

Robert Shepack, President
 Enrique Solis, Vice President
 Diane Troyer, Dean of Business and Technology
 Candace Castillo, Director of Resource Development
 Mike Roark, Director of Advanced Technology Center
 Carol La Fleur, Coordinator of CAREER program
 Jim Dickens, CAREER Faculty
 Endre Kozma, CAREER Faculty
 Larry Hartman, CAREER Faculty
 Tony Portillo, CAREER Faculty
 Robert Weirich, CAREER Faculty
 Fred Cavallves, CAREER Staff
 Angie Jimarez, CAREER Staff
 Kathy Ortega, CAREER Staff
 Isabel Pinon, CAREER Staff

All of the EPCC personnel listed above were interviewed as were many of the EPCC support staff from other departments and areas of related institutional functions. On occasions when scheduling conflicts prevented individuals from meeting with the evaluator, other personnel with involvement in the CAREER activities were interviewed instead, for a fuller perspective.

Charts detailing staff assignments and supplemental progress reports were also studied. Observations and records were chosen for review based on compatibility with the evaluation methodology

and the purposes, requirements, and provisions of the 1988-1990 Plan of Operation.

Close attention to record-keeping and reporting also helped with internal programmatic evaluation. Adequate documentation of implementation strategy achievement and staff commitments was available. The evaluator found each member of the staff receptive to suggestions made as part of the evaluation process, and willing to consider alternative courses of action, if appropriate, to improve the project performance.

Use of Federal Funds

At EPCC, accounting practices conform to generally accepted accounting principles, as applicable to colleges and universities. The financial statements of EPCC are audited on an accrual basis. The institution's accounts are maintained in accordance with the principles of fund accounting. Resources for various purposes are classified for accounting and reporting purposes into funds that account for the activities or objectives specified. Externally restricted funds can only be utilized in accordance with the purposes established by the source of the funds.

EPCC has kept separate restricted accounts for its CAREER funded activities. All charges to the grant have been initiated by the authorized CAREER Coordinator, monitored by the Institution financial office, and authorized for payment by the Director of Advanced Technology Center. CAREER funds were not used by the College for the purpose of offsetting institutional costs. No commingling of CAREER and institutional funds took place. EPCC ability to successfully assume full fiscal responsibility for the

management of CAREER funds has been demonstrated. Ability to maintain accurate records relating to project expenditures has also been shown.

EPCC has had considerable experience in the fiscal administration of federal grants, and as a result has in place a grants management system which provides for full accountability. Clear and adequate audit trails for post-audit reconciliation are in evidence.

Summary Assessments and Conclusion

Component capsules presented previously in this report highlight project accomplishments and demonstrate that the EPCC Project has used federal resources successfully, in keeping with CAREER purposes. The overall pattern of success is illustrated by the average external evaluation Component scores, listed below.

	<u>Average Attainment Rating</u>
Component I: Curriculum Review and Development	5.0
Component II: Assessment and Counseling	4.6
Component III: Instructional Delivery	5.0
Component IV: Follow-up Services	2.6
<u>Overall Career Attainment Average</u>	
	4.3

Credit for the success of these Components is due to many factors: Presidential support, effective and systematic management, cooperation among staff throughout the institution, and the enthusiasm and dedication of the CAREER Staff. EPCC's administration has provided leadership and direction for planning and implementing the CAREER project.

The Evaluation Design for the project suggested that there are three reasons to collect data and information on the CAREER program. The first was to understand the "fit" between EPCC and the CAREER project, and with this information be able to develop future training programs that could work. The second is to develop communication strategies with the outside and to communicate more effectively and to respond to area needs and concerns. The third is to understand the problems the CAREER project faced and to develop program strategies to overcome these problems.

Employer Perceptions

The employers interviewed who had hired CAREER graduates were of one voice in support of the project. It was their feeling that CAREER project is a valuable resource in the economic development of the El Paso region. The skills of the labor force are a major consideration for new companies investigating an area for a site and those considering expansion of existing sites. The use of public funds to train persons for jobs in new or expanding companies is a very sound concept. CAREER project can be used as a marketing device to attract still more new businesses and industry to the region. CAREER not only seems able to supply well trained people, but the project does this relatively quickly and inexpensively. Equipping individuals with new skills is of prime importance in light of an underskilled and changing labor force, and rapidly advancing technology. Especially for women returning to the labor market who are a significant component in El Paso's current labor force the CAREER project has acted as a successful vehicle for obtaining access to jobs, particularly in traditionally

male-dominated fields. Providing an educational program such as CAREER which is affiliated with a community college is a very sound use of area resources and is mutually beneficial. The college provides local industry with short term training needed for an expanding economy and industry supplies the technological equipment necessary for adequate training.

The CAREER project served populations who are traditionally denied access to jobs. Each job placement not only helps the local economy in the traditional considerations of new taxes, dollars spent, and related spin-offs, but also provided individuals with economic independence and a sense of individual dignity. This often results in public savings, as individuals no longer require income maintenance programs such as welfare.

Economic Benefits

Economists have devoted enormous amounts of effort to exploring the outcomes of education. Literally thousands of studies have been made, especially during the past two decades on the "rates of return" to investments in education, and other studies have been made on the effect of higher education on economic growth. On the whole, economists have not tried to discover the particular aspect of education that produces investment returns or economic growth but have confined their studies mainly to effects that can be measured in dollars. Most is not all studies report a positive economic and social returns on investments in education. The CAREER project is no exception to these findings.

CAREER project helped to bridge the human resource gap which exists in the El Paso community between available unsubsidized jobs and the skills possessed by the unemployed. CAREER helped to mend the mismatch which exists between the area's labor pool's skill level and the area's labor market demands. CAREER project analyzed the skills necessary to obtain a job successfully in a given occupation, and then develop a curriculum which provide these skills. The major function of CAREER was to train individuals successfully so they can obtain and retain a job. CAREER training was geared toward preparing unemployed, disadvantaged individuals for entry level openings in local business and industry. In this evaluators judgement CAREER not only has had this as a goal but was able to accomplish it.

Moreover, from the broadest social point of view, the "rate of return" that project accomplished with its target population suggests that a dollar committed today to benefit the present participants is more valuable than a dollar in the future to benefit the future descendents of these participants. From the point of view of students and their families CAREER project yielded a significant return. Despite all problems and uncertainties which plague all efforts to learn about the outcomes of educational process, the evidence from the project participant completion rate provides a fair amount of reliability and plausibility that CAREER dollar investment produced substantial and positive returns. The average hourly monetary return of \$5.22 per hour for those who completed the project does not include the many valuable returns that are not reflected in the money income.

Studies of the sources of economic growth usually recognize five potential factors increasing a regions income: the use of more labor; the use of more physical capital; improvement in the productivity of labor; improvement in physical capital; and more effective organization of these resources in production. The CAREER projects outlays clearly are most directly related to the third of these possible sources - improvement in labor productivity. However, the evidence on CAREER project, also suggest strong indirect links between the project and other four sources. CAREER was able to raise labor quality by imparting in the participants greater discipline and reliability, increased efficiency, prompter reactions to new information and heightened mobility. The project influenced the amount of labor available. It may well, if it is able to become a permanent part of the EPCC training programs, alter the amount of regional capital as well. Then too, it may improve the quality of physical capital by creating a working group attuned to the needs and uses of machinery and equipment and better capable of using new equipment. Finally CAREER educated individuals will help improve organization and management of production.

Participants Benefits

This far in this evaluation, the investigator has reviewed and interpreted a considerable amount of evidence about the actual and potential consequences of CAREER project. Despite some failures to meet the proposals original performance measures, the evidence all points in the same direction--that is, to significant positive effects of CAREER project on booth participants and society. This

evidence is found all of empirical data reviewed as well as in firsthand observations. It stems not from dramatic findings of critical analyses of any project data but from the cumulative piling up of many small pieces of data on many of the facets of CAREER effort. Even though the significance of any particular fact or observation is likely to seem small by itself, the final impact of evidence is overwhelming, the CAREER project; taken as a whole, is enormously effective.

The primary purpose of CAREER program was to change people in desirable ways. These changes, in turn, were to have an effect on local economy. But in the first instance CAREER primary goal was to modify the traits and behavior patterns of individual project participants. This is not to imply that CAREER attempted to fit every participant into the same mold. Far from it. The project provided a source of opportunities to which individuals responded in different ways according to their talents, interests and aspirations. CAREER desired to give its students a chance to workout their futures in an environment that encouraged certain ranges of outcomes. CAREER, on the average, had clearly identifiable effects on its students. It significantly raised the participants level of knowledge; it generated moderate increases in participants verbal skills. The evidence also supports the conclusion that on the average the project helped the students in finding their own personal identities and in making occupational choices which are congruent with these identities. It also appears for its female participants to have narrowed the traditional work

related attitudinal stereotypes associated with male-dominated fields.

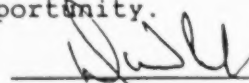
CAREER enhanced the practical competence of project participants as citizens, workers, family members and consumers. It also seems to have influenced in a positive way the students ability to cope with life's problems. Perhaps the main influence of the project was in developing the practical competence that helps the individual develop the skills and traits of general application such as verbal facility, job knowledge, adaptability and self-confidence. In the area of economic productivity, the project assisted its students in the process of self-discovery and helped them find careers congruent with their talents, interests, and aspiration. It provided specific vocational training for population which has been traditionally ignored by education. In addition, it allowed its female participants to enjoy greater allocative ability to adjust promptly and appropriately to changing economic demands and technologies.

Conclusion

From the previous commentary one should not draw the conclusion that CAREER succeed with all of participants who joined the effort. It didn't and can't. There was still a disappointingly large proportion of the individuals who entered the project who remained "turned off". But in twenty years of educational assessment, this evaluator has not seen any other project which has succeeded as well as CAREER has in getting disadvantaged adults to rebuild or recapture some satisfaction with learning and self. CAREER has accomplished remarkable things in

the educational retrieval and rehabilitation of minority adults. It is hard to imagine that a thoughtful review of this evaluation and the underlying documentation could lead to any conclusion but that the sum of benefits exceeded the total cost of the project. The monetary returns alone, in the form of enhanced earning to the participants who completed the project are probably sufficient to off-set all the costs. But over and above the monetary returns are the personal development and life enrichment derived from the project participants.

In short, the cumulative evidence leaves no doubt that CAREER project was well worth what it cost. It is in this evaluators judgement a moral imperative for EPCC to find the funds necessary to continue the operation of CAREER project. The number of persons in the EL Paso area who could benefit from a continued CAREER program greatly exceeds the number who benefited from this project. On moral, not only on economic grounds, each individual should have the opportunity to develop his or her unique abilities fully. EPCC in its mission has an obligation to ensure that citizens of its service region are allowed this opportunity.



David Leeb
External Evaluation
EPCC's CAREER Project